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Aerial Delivery

Tri-Annual Publication For The Aerial Delivery Community

Volume 5, OCT 04

How the Army protects it's paratroopers

Army holds competition for newly designed parachute- results are in!

The human side of war- See our photo gallery

Precision cargo chutes used in Iraq

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Published By Aerial Delivery Equipment Group, Integrated Logistics Support Center, Natick, MA

Aerial Delivery Magazine - ADM

Publisher's Corner

Aerial Delivery Equipment Group Senior Team Leader Gloria Wooten-Standard welcomes Michelle Sullivan, Personnel Parachute Team Leader to the Group

Fiscal Year 2004 was a record-shattering sales record for the world of military Aerial Delivery! Due to the teamwork and dedication of our partners such as the Robert Morris Acquisition Center, the Research Development and Engineering Command and last but not least, our industry partners, the Parachute Industry Association, we were able to furnish our Soldiers with the very best equipment possible. Thanks to all for playing such a vital role in our nation's defense!

And now it's time to look back at the year and reflect on all the exciting events that happened within our team and in our Aerial Delivery community. First off, our team now has a new name. In 2004, the Aerial Delivery Sustainment Team upgraded their ability to provide even better Aerial Delivery support by hiring several new members. As a result, we experienced a whopping 60% growth spurt in our staff. The team, which is now bursting at the seams, has become so large it is now designated as a group! Hence, the new name change, we are now called the "TACOM Aerial Delivery Equipment Group".

The Group is comprised of two teams, the Cargo Parachute Team and the Personnel Parachute Team. Many of you have already met Mattox Turman, our Cargo Parachute Team Leader. However, I am also proud to welcome Michelle Sullivan, our new Personnel Parachute Team Leader. Michelle comes to the Group with an extensive logistical background, a tremendous amount of energy, and most importantly, a great Can-Do attitude!

Having an abundance of personnel has allowed us to dedicate ourselves to look at how we can fine-tune our business practices. In an effort to better serve our War fighters, as well as our industry partners, we're now focusing on ways to create more growth, opportunity and stability for our Aerial Delivery Manufacturers. We started by fine-tuning the process used to qualify manufacturers to bid on personnel parachute contracts. As you know, contractors can only bid on these contracts if they are on the Qualified Product List (QPL). We hope to accelerate the QPL certification process and provide more and faster opportunities for manufacturers to bid on new government parachute solicitations. You can read more about changes to the QPL process in this issue of ADM. We've also looked at opportunities in foreign military markets as well. During FY 04, we set a record for Foreign Military Sales. If our projections hold true for 2005, the percentage of Aerial Delivery equipment for foreign military sales will be in the upper triple digits!

As a means of communication and keeping everyone abreast of all the great things that are happening in the world of military Aerial Delivery, we recently spearheaded the creation of a new web site to reach out to all our current and potential customers and colleagues. You can read more about our web site in this issue of ADM.

And finally, as you all know, we are hosting "Manufacturer's Week" 2004. This event is an initiative designed to bring Aerial Delivery Manufacturers and the military Aerial Delivery community together to discuss mutual equipment concerns, improvements and innovations.

These are such exciting times for Aerial Delivery professionals! The current and projected demands for Aerial Delivery Products are the realities of this powerful growth industry that is far from reaching its peak. Here's wishing you all a safe and prosperous new fiscal year. See you in January 2005!

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Kansas Street
Natick, Massachusetts 01760

Publisher: Gloria Wooten-Standard
Gloria.Wooten@natick.army.mil
(508) 233-6011
DSN 256-6011
Editor-in-Chief: Daniel R. Galarza
Daniel.Galarza@natick.army.mil
(508) 233-6013
DSN 256-6013
Editor: Michael Maloney
Michael.Maloney@natick.army.mil
(508) 233-5693
DSN 256-5693
Editor: Jane Benson
Jane.Benson@natick.army.mil
(508) 233-5567
DSN 256-5567

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Point of Contact Daniel R. Galarza
Daniel.Galarza@natick.amy.mil
(508) 233-6013
DSN 256-6013

Questions? Comments.
Have an article to submit? Call Daniel Galarza at (508) 233-6013 or e-mail at Daniel.Galarza@natick.army.mil

Submit your Airdrop photos to the *Aerial Delivery Magazine*, we could feature your photo on the Cover! e-mail at Michael.Maloney@natick.army.mil

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Aerial Delivery Equipment Group Mission

Provide innovative, robust and streamlined total life-cycle logistics and material readiness support to all DoD organizations for Aerial Delivery products.

"This was taken on our way back to Camp Cuervo, my camp, on the southwest side of Baghdad. The gunners, atop the HMMWVs wear gloves and face scarves even in the 100+ degree heat. There is a lot of dust and odors in the air here. Imagine sewage combined with burning garbage, factory smoke and car exhaust and that should give an idea of what it smells like here- all the time."

"This is a statue outside of BIAP (Baghdad Int'l Airport). There are very few statues and murals that survived the war."

"I guess this is the season for watermelons! They are sold about every other block, as you can see here. Convenient stores? Nah, nothing like that here, but they are convenient! You just pull your car over and buy all kinds of fruit and vegetables- that is if you don't mind all the flies crowding over them."

"This was taken while riding in a convoy, which is why the picture is blurry. But I sent it anyway to show how the Iraqis let their sheep and goats graze along the roads. What you cannot see, but what is common here in this city, is the animals grazing over heaps of trash and rubble."

Aerial Delivery Magazine - ADM

Final Two - Competitors' Canopies Selected

A recent competition has made Airborne Soldiers one step closer to receiving the eagerly awaited Advanced Tactical Parachute System (ATPS), which helps reduce the risk of injury during landing. The ATPS reflects the most advanced design change to a standard airborne personnel parachute since the T-10 was introduced in the 1950s.

Two canopies out of five entries were chosen for the final phases of the ATPS competition. Para-Flite's model MTR-1C and Irvin Aerospace's model 8mLLP (8 meter Low Level Parachute) were officially selected following deliberations during Phase II of the Technical Evaluation Board meeting on August 3, 2004. The winner will be chosen in May 2005.

The competition/technical evaluation was conducted during June 7-18, 2004, at the Yuma Test Center. Canopies from five manufacturing candidates were used in 87 test drops. The data collected during the test drops examined the rate of descent (ROD), opening shock forces, altitude loss to stabilization, ability to avoid obstacles in mid-air and on the ground, oscillation angle, and packing times. Subject Matter Experts (SMEs) spent equal time with each vendor learning the integration of each main canopy with the current ATPS harness and reserve. SMEs also analyzed each canopy's logistical and integration impacts to the field.

Following analysis of collected data and deliberations, the two finalists were notified of their selection and of corrections required to their respective main canopies. For the Para-Flite canopy, corrections consisted of Logistical/Rigger related functions. For the Irvin canopy, corrections consisted of either changing current packing procedures or possibly modifying the parachute pack length by about two feet at each end.

MTR1-C

8m LLP

Corrections to the two canopies will be verified through a Design Validation (DV) test to determine if the products are ready to proceed to Development Testing (DT), which will encompass engineering type testing.

The planned Early Operational Assessment (EOA), which will subject the two selected canopies to user evaluation, will not be held in November 2004 as scheduled due to the board's detection of a dual door deployment issue. The dual door issue became apparent when projected trajectories of all main canopies (with a diameter greater than the currently used T10) significantly increased the probability of collisions during main canopy deployment sequence from the C-17 aircraft. To reduce risk, board members recommended that the dual door performance step be evaluated during a DV mannequin test. If the DV test phase is completed successfully, the EOA will take place with live jumpers at Fort Bragg, NC.

Government testing is expected to begin in March 2005 and end in May 2007. Testing includes DV, EOA, developmental testing (DT) and operational testing (OT), during which all Operational Requirements Document (ORD) requirements will be evaluated.

Frank Cruikshank is an equipment specalist for the Aerial Delivery Equipment Group

“This is a shy girl who ran to greet our convoy as we passed through the village. The people in this village are so poor, their homes are made out of mud and clay.”

“This is Baghdad’s version of a super gas station. What makes it super is the age of the kid running it – normally there are young kids selling gas on the side of the road. Also there is a variety of gasoline and other liquids and lubricants available – usually there’s just a couple of gas cans and a 7 year-old with a makeshift hose and nozzle.”

Photo Gallery

Editors note: *The following pictures featured in this issue of our photo gallery were sent to us by a soldier stationed in Baghdad. The photo, although taken from the inside of a moving "Hummer", depicts a very gritty perspective on the human side of war. However, what we found most compelling, were the narratives provided by the soldier. The captions accompanying the photos resonate the danger, tragedy and human suffering that is endured on a daily basis not only by our U.S. military forces, but by the innocent people of their host nation. Please take time to study the following pictures, and please, pray for the safe return of our soldiers.*

"This picture was taken as we were returning to our camp. The Iraqi police set up a roadblock because an incendiary explosive device went off on the ramp. This is the ramp we normally take, so thank goodness the enemy missed us- this time…"

51 Years of Falling From The Sky

10 is gentler and more forgiving, according to Stalker. Decades of refinement on the T-10 make it a tough parachute to replace, but with heavier combat loads, a replacement to slow the rate of descent is on the way.

He now works closely with industry as a "contractor's troubleshooter," where he can apply his broad expertise that expands outside shop foremanship, said Edward Doucette, director of Airdrop and Aerial Delivery, who's worked with Stalker for 19 years.

"He's really a testament of how smart he is with production. He has a rare skills set," Doucette said. "(Plus) he's enjoying himself. He loves jumping. I don't think he'd stay if he couldn't jump."

Stalker jumps at least once a quarter to stay qualified, gaining experience with a variety of static-line parachutes, and has a physical every other year to calm any fears of his fitness.

"You don't grow old if you stay with it. We have a jump schedule, and I look forward to it," Stalker said, who has no immediate plans of retiring. "It's been the thrill of my life working here for the Soldier. I just love 'em. Because of that I can't seem to let go."

Aerial Delivery Equipment Group On The Net

Natick, MA - After months of organization and team work, the new Soldier Biological Chemical Integrated Logistics Support Center (ILSC) website has

SBC ILSC Homepage

been launched. Completely redesigned from the ground up, this website informs and educates the reader. It gives the world a window to look into the ILSC and how they support the most important part of the Army, the Soldier.

The website features all new graphics and color scheme. The content is also a huge upgrade from its predecessor; the site is informational as well as a work tool. The quick news section provides links to current Army news that is updated weekly. There is information on each team here at Natick, with lots of helpful links and information on the items we manage. Links include sites like Acronym finder, and Govtjobs.com, to name a few.

To access Aerial Delivery information, type in the address (http://ilsc.natick.army.mil) and click on SBC information, then click on the Soldier Product Integration Directorate, after that click on the Aerial Delivery Equipment Group Logo. This is a porthole to useful aerial delivery information. It features pages of our most popular items (cargo and personnel) with pictures and descriptions. A national stock number listing broken down by system is also provided. To contact the Aerial Delivery Equipment Group, check out our list of contacts. Our delivery schedule will show you when your equipment will arrive and our equipment forecast will give you an idea of what contracts will be awarded in the next fiscal year. If we do not have the information on our website check out our links page. If that still is not enough for you click on the link entitled *"Want to learn more about Aerial Delivery?,"* click on the bottom of the page to access past issues of *Aerial Delivery Magazine*, information on Manufacturers' Week held annually at Fort Bragg, NC and an equipment national stock number listing. Keep checking the site as we add and update the site to better serve the viewer.

The task of creating a new ILSC SBC website was headed by equipment specialist Daniel Galarza. Dan guided the student hires every step of the way by providing guidance and direction. Webmaster and summer hire Salomon Rafique drew from his knowledge of graphic design and vast computer experience to help complete the site in only a few short months.

ADE Homepage

Helping Salomon was fellow summer hire Daniel Gailor who was in charge of providing content for the site. The team of three finished with no time to spare, but with a much-improved final product. Thanks goes out to each team member for a job well done. Come check us out at our new URL, http://ilsc.natick.army.mil

Michael Maloney is a Logistics Management Specialist for the Aerial Delivery Equipment Group and an Editor for Aerial Delivery Magazine

da Vinci - You Were Right!

The renowned Italian multitalented Leonardo da Vinci (1452-1519), between 1483 and 1485, sketched an idea churning about in his ever busy mind. He had been thinking about the plight of people trapped by fire in the upper reaches of tall buildings - without any means of saving one's self.

It was not unusual that such a matter piqued his curiosity, kept prodding his thinking process. He had already proved his genius as an engineer, mathematician, scientist, inventor, painter ("La Gioconda, a.k.a., "Mona Lisa"; "The Last Supper"), sculptor, musician, and dabbler with countless other interests.

Adrian Nicholas testing daVincs's "tent roof"

People had died after purposely leaping from a structure rather than enduring the agony of burning. The inventive da Vinci imagined a device that would provide a safe rate of fall. In one of his many notebooks he made a sketch of his idea with a marginal note that has been variously interpreted; basically describing the use of his idea: "If a man is provided with a length of gummed linen cloth with length of 12 yards on each side and 12 yards high, he can jump from any height whatsoever without injury." Other translations vary, but the message is much the same.

The crude sketch depicted a large four-sided cloth-covered framework resembling a pyramid in shape. Attached to each lower corner of the shape were four long suspension lines secured together at a confluence formed at the lower ends of the lines. In use, da Vinci showed how someone would hang by hands from the line confluence and be lowered beneath the open shape to the ground.

That was the extent of da Vinci's making a point. No records exist showing that in his lifetime he (nor anyone else) ever made a model of his idea, as he so often did with numerous other projects. Nonetheless, through ensuing centuries, as parachutes did come into existence, and da Vinci's minimal effort was reviewed, he came to be credited with being "the father of the parachute." (It was not until long past his death that the term "parachute" was coined.)

Engineers periodically gave credence to da Vinci's idea, opining the device could have or would have worked. However, questions persisted: "Where would such a unit be stored, awaiting use?"; "Wouldn't a user be injured by collapse of the framework when landing?

No one bothered to learn answers. The great innovator's scheme moldered among his vast store of papers, now among the world's most valuable documents.

Five hundred years later, in the year 2000, a British skydiver resolved to put da Vinci's idea to the test. What he did was not on a whim. The parachutist (people actively involved in the sport are known as skydivers) was highly experienced 38-year-old Adrian Nicholas, with 6,500 jumps. He had long had an ambition to try parachuting with a rig he would build based on da Vinci's meager sketch. After all, with what he knew from his years of parachuting experience, the concept appeared it could work. Many persons he consulted, however, had differing opinions and advised him against such a project. Some warned the idea was unworkable and dangerous; it would tip over and air couldn't be trapped within the canopy, or it could spin about uncontrollably, or it could fall apart and he might be trapped in the falling wreckage. Nicholas remarked: "The consensus opinion was that I was going to be in for a very wild ride."

But the yearning to proceed - to at least make an effort - gnawed at him persistently. He carried on methodically.

His Swedish friend Katarina Ollikainen agreed she would help fabricate da Vinci's design, based on translation of the inventor's notes in Italian language that was done by Martin Kemp, a history professor at Oxford University. Kemp was able to determine dimensions and materials for building the proposed parachute

51 Years of Falling From The Sky

NATICK, Mass. -- Peter Stalker first jumped out of an airplane as a 19-year-old Soldier in 1953. Today Stalker continues his freefalling antics as a Department of the Army civilian employee testing parachute prototypes.

The Parachute Prototype Facility team leader at the Soldiers System Center, Stalker joined eight civilian employees and Soldiers from the Natick Aerial Delivery Life Cycle Team for a static line parachute jump at Fort Benning, Ga., recently to commemorate the 51st anniversary of his airborne school graduation.

Peter Stalker (left), team leader for the Parachute Prototype Facility, is jumpmaster-inspected by Sgt. 1st Class Mark Bleuze, parachute rigger at the facility, while Dean Rogers, Aerial Delivery Engineering Support Team leader, watches. Stalker recently marked his 51st anniversary of his airborne school graduation with a jump at Fort Benning, Ga. (Photos are by Sarah Underhill, U.S. Army Soldier Systems Center, Natick, Mass.)

"It was marvelous. The C-17 (airplane) is as nice as your living room," Stalker said, who's recorded more than 3,000 jumps in his lifetime. "It doesn't seem to bother me physically. I like the impact and I enjoy the bang."

Back in his Army days, make that also a punch.

The Massachusetts native enlisted in 1952 as an infantryman in a heavy weapons platoon and decided to go airborne for the extra pay. At airborne school in Fort Benning, he was selected to become an instructor, but during a parachute entanglement with another student in the jumpmaster course, he broke his foot.

During his recovery, an opportunity opened to join the post boxing team, which led to assisting the boxing team at the U.S. Military Academy at West Point, N.Y. He kept his jump status with a small airborne unit.

Leaving the Army in 1955, he pursued a professional boxing career that ended after five fights. He also trained to become a private pilot and remained involved with parachuting, this time skydiving with a school he opened in Pepperell, Mass., and barnstorming at local fairs around New England. Their performances were years before the establishment of military jump teams, such as the Golden Knights.

"I needed the money, anything for $100," Stalker said, which supplemented income as a toolmaker to support him and his family. "There was nothing you could read about (skydiving). We learned it after about a year of beating ourselves up. We made more tree landings than field landings."

Once, an updraft carried his parachute from about 2,000 feet to 16,000 feet before he was able to break out of it and land at a country club during an armed forces day in New York. On another occasion, he modified his canopy to be able to get an extra lift. Instead, he zoomed straight down.

"I was told that it looked like I bounced 10 feet," Stalker said, describing his landing. "My pants split open(at the knees). The next day I hurt all over, but I didn't break any bones."

Parachuting became more than a side job when Stalker fulfilled a longtime desire for employment at Natick Laboratories, as it was called then, in 1968 when he was hired as a fabric worker at the Parachute Prototype Facility.

The facility fabricates prototype personnel and cargo parachutes, harnesses and accessories, modifies equipment and provides quick-response production.

He continued jumping out of airplanes as a skydiving instructor after work, but it wasn't until the 1980s that Stalker was able to return to jumping for the military. For the first time, civilians responsible for research and development of parachutes were authorized to attend jump school. After a refresher course, Stalker returned to his paratrooper roots.

"This teaming between military and civilians was the brightest decision. It helps give the engineers and designers credibility with the troops," he said. "(Returning) was like I never missed a day. It was a different aircraft but the same feeling. There's always a tension. There's a closeness, a feeling that you overcome that fear. If I ever thought my equipment couldn't do the job, I'd be the last person off the plane."

Compared to the T-7 parachute of 1953, the current T-

THE INFORMER

TACOM's Soldier Product Support Integration Directorate (PSID) relies on Product Quality Deficiency Reports (PQDRs) to help keep soldier equipment safe, ready, and mission capable.

The Aerial Delivery Equipment (ADE) Group, part of TACOM's Integrated Logistics Support Center (ILSC) Soldier PSID, is eager to fix and resolve any problems regarding its soldier equipment. Product Quality Deficiency Reports (PQDRs), which inform the team of any discrepancies or problems, enable the team to do so.

The Product Quality Deficiency Report (PQDR) is a uniform report format that is used to electronically report information about products in the field that are found to be defective or that do not conform to condition standards for proper use. These deficiencies can result from improper use or from manufacturer defects and discrepancies.

Concerns about seam grinning on the G-12 parachute was cause for a PQDR

Soldiers are required to report all A12 discrepancies (or problems pertaining to certain items managed by TACOM) that are discovered in the field. Without knowledge of discrepancies or problems, the ADE Group cannot initiate important corrective and preventive actions to fix problems or prevent problem reoccurrences. Without knowledge of discrepancies, the ADE Group also cannot seek credit or compensation for items when applicable.

The PQDR system is available to Soldiers 24/7, and serves as a tool to help ensure that ADE's products meet safety, readiness and mission performance requirements at all times. Submission of the PQDR results in an investigation/evaluation that is initiated through the Army Electronic Product Support System (AEPS).

To submit an electronic PQDR, go to: http://aeps.ria.army.mil/. Those attending the Malfunction Review Board in October 2004 will be provided with a handout with examples and instructions of how to fill out a report properly.Once a PQDR is filled out, all A12 items are routed to the point of contact (POC) in Natick, MA (see contact information at the end of this article). The Aerial Delivery Equipment Support Team (ADEST) will then begin its investigation process. ADEST then provides a Corrective Action Memorandum to the ADE-POC. Corrective Action memorandums include findings, recommendations for screening, action alerts, test results--and if applicable--the need for acquisition assistance to support corrective action.

Once discrepancy information has been received, the Action Officer then makes updates to the system. When possible, the Action Officer will also forward the updates to the sender of the PQDR.

If you have any questions regarding the PQDR Process, please feel free to contact the Natick PQDR-POC for A12 Products: Angela J. Hunter. Angela.Hunter@natick.army.mil, DSN 256-6220.

Angela Hunter is an Equipment Specialist for the Aerial Delivery Equipment Group

Built primarily of round wood poles and canvas, "contraption" would be a suitable description for the pyramid-shaped form. It was made with fabric available to workers of 500 years ago and fashioned with tools of that period. Pine wood was notched to make joints and lashed securely with rope. Ultimately, da Vinci's completed rig would weigh in at 90 kilograms (198.42 pounds).

An early sketch of a da Vinci “tent roof”

As fabrication continued, other arrangements were made to monitor and record Nicholas' project. There was a lot of scientific interest in what he was attempting. Naysayers were watchful, certain they were still right about the improbability of success. One of the positive-thinking parties was a group of researchers from England's Salford University who were to build a simulator of the parachute design for the Manchester Museum of Science and Industry. They planned to install a camera and devices to measure speed and movement of the descending rig. The test jump was scheduled to be made in Mpumalanga, South Africa because there were wide spaces and ideal parachuting weather in that part of the world.

At the test site, the apex of the parachute framework was secured to a rope positioned beneath the balloon's passenger basket. As the hot-air balloon was inflated Nicholas fastened a rope between an attachment at the base of da Vinci's canopy suspension lines and the parachute harness he was to use when he separated from the test unit at about 2,000 feet above the ground and descended the remaining distance under his modern high-performance ram-air parachute. (That "cutaway" was a safety measure, planned so Nicholas could move away from the descending rig and avoid entanglement with the heavy framework when it landed.) The balloon slowly rose. In moments, da Vinci's canopy and lines were off the ground, dangling below the passenger basket bearing the pilot and Katarina Ollikainen. She was to cut the rope and free the da Vinci/Nicholas parachute when the release altitude of 10,000 feet was reached.

Then the parachutist also was lifted, hanging below the hand-built da Vinci replica.

Three months after the project was started, a visionary testing the reality of another visionary's mind was free of earth, setting out confidently on a long-sought quest. The balloon and its contraption steadily rose up into the clear, quiet sky.

Throughout the ascent two helicopters were in proximity, with cameras filming the rising balloon, parachute, and Nicholas from every angle. Also on board were two skydivers who would jump at altitude using standard ram-air sport canopies. They, as well as jumper Nicholas, were equipped with cameras to capture many testing aspects. When Ollikainen cut the retaining rope the pyramidal canopy, with Nicholas staring up at it, drifted slowly away from beneath the balloon. His body microphone clearly picked up his voice as he excitedly called out, "Mr. da Vinci - maybe you were right!" Nicholas later reported: "From my perspective, I just saw this canvas material billowing in the wind like the sails of an ancient sailing boat. And I just hung there in space. There was no oscillation, no rotation or gyration or anything….It was wonderful. Absolutely wonderful."

Nicholas and the da Vinci parachute successfully flew together for four minutes and 55 seconds on July 25, 2000 . At 2,000 feet the two parted company as planned. The test canopy kept descending, landing softly, with all test devices undamaged.

Da Vinci had been vindicated.

We are proud to featurearticles by the renowned para-historian Jim Bates. His articles featured in this magazine provide a historical perspective on the evolution of Aerial Delivery.

US Marines Use Precision-Guided Parachutes to Perform Combat Resupply

CAMP KOREAN VILLAGE, Iraq (Aug. 16, 2004) — Steering themselves from nearly two miles high to within less than 200 meters of their target, the Marine Corps' two newest skydivers made their first combat zone landing Aug. 9, 2004, near here.

The jumpers, however, are machines. Smart machines.

Programmed with the drop zone's coordinates, guided by the Global Positioning System, and maneuvered by motor-tugged lines, the Sherpa units each sat atop a pallet of rations for Marines here, riding them to Earth and ushering in the future of cargo delivery by air.

The owner of the new Sherpa is the 1st Air Delivery Platoon, part of Combat Service Support Battalion 7, 1st Force Service Support Group, which delivers supplies to Marine units throughout the vast western portion of Iraq's Al Anbar Province.

GPS-guided parachutes like the Sherpa eliminate numerous disadvantages of air dropping supplies to far-flung troops, said Army Capt. Art Pack, 37, combat developer with the Army's Combined Arms Support Command in Fort Lee, Va.

The Sherpa uses a rectangular, 900-square-foot parachute, which can be steered, vice a classic round chute. It also incorporates a small drogue parachute to help stabilize the cargo pallet, keeping it facing upward so the main chute opens properly after freefalling. "It's basically your standard freefall rig, just super-sized," said Pack, a native of Winter Haven, Fla.

While in flight, the Sherpa constantly checks its position using a GPS receiver, and makes flight adjustments as necessary, pulling on two steering lines to turn the parachute.

A Sherpa precision cargo parachute system approaches its drop zone outside Camp Korean Village, Iraq, on Aug. 9, 2004. The Sherpa is a commercially-produced system guided by the Global Positioning System that can steer itself from nearly five miles high to within 200 meters of a targeted drop point, enabling pilots to stay out of the range of enemy fire. Photo by: Staff Sgt. Bill Lisbon

Before any mission, the aircraft's altitude and speed, the cargo's weight, the drop zone location and wind speeds for various heights must be programmed into the Sherpa's control unit so it can calculate a flight plan, said Gunnery Sgt. Lorrin K. Bush, 35, head of the air delivery platoon. It can even be programmed to maneuver around obstacles or locations where enemy forces are located.

In response, the Sherpa calculates the precise point in the sky where the cargo must be dropped. As a result, the riggers are taking on more responsibility since they can now plan part of the flight's path. Previously, this task fell upon the plane's navigator.

"We give them the mission and say "Fly this,'" Bush said. "They're not used to hearing that from us."

Currently, cargo is dropped via "dumb" parachutes, which have varying accuracy depending on the altitude of the aircraft and wind conditions during the drop, said Pack. Low-altitude drops, classified as anything under 2,000 feet, are fairly accurate, but put the plane and its crew in range of crippling enemy fire.

"The GPS-guided chute gives us more flexibility dropping the load," said Edmonds, Wash., native Capt. Robert D. Hornick, 28, a KC-130 cargo plane co-pilot from Marine Aerial Refueler Transport Squadron 352, the unit that flew the mission. "We just get close to the 'DZ' and drop it and it does the rest."

A week prior to the Sherpa's debut, a KC-130 dropped

Gaining Experience

TACOM's Soldier Product Support Integration Directorate (PSID) helps student employees gain valuable work experience.

TACOM's Integrated Logistics Support Center (ILSC) Soldier PSID is helping students solve the familiar Catch-22--you can't get the job without the experience, but you can't get the experience without the job.

To help address this problem, Soldier PSID kicked off its first official Student Summer Augmentee Program (SSAP) Orientation in June 2004. The program provides students with valuable work experience and also benefits PSID by providing the organization with the opportunity to train new talent.

Pictured left to right back row Soloman Rafique, Kim Standard, Kelly Standard, Dan Gailor, Michael Standard, front row Karla Thurston and Mellisa Leclair

Students are pre-selected through the Student Temporary Employment Program (STEP). The program is designed for students currently pursuing an educational/academic goal such as a high school diploma or General Equivalency Diploma (GED). Students pursuing Vocational/Technical certificates, an associate, baccalaureate, or graduate degree or any other professional degree program are also eligible. Once the students are selected and officially in the STEP program, they are assigned to the ILSC in various jobs and assignments. This year the ILSC selected ten students.

Ginette Braziel and Dan Galarza, of Soldier PSID's Aerial Delivery Sustainment Team, designed a structured, innovative approach to challenge the students and to promote their professional development, as well as fit the needs and goals of the ILSC. Soldier PSID wanted to provide the students with more than a summer job; the organization wanted to assist them in developing skills that would help them prepare for future careers and to recruit candidates for the Government Intern Program.

Each student was provided with materials to acclimate them both to the organization and to local area. Each was also assigned an experienced mentor to provide career guidance. Mentors served as teacher, coach, counselor, and role model while also evaluating and advising the individual on their duties and responsibilities. The mentors also provided the students with daily duties, special projects, as well as opportunities to improve their professional speaking and briefing skills.

The program proved both educational and rewarding for the mentors and the students. The mentors were pleased and proud of the professional quality of the students' work, and the students expressed great gratitude in being given the opportunity to really feel like a part of the organization. They are eager to return.

Ginette Braziel is a Logistics Management Specialist for the Aerial Delivery Equipment Group

landing stages, with atmospheric friction steadily contributing to the deceleration.

Parachute design was based on technology achieved with prior Viking and Pathfinder missions. The parachute is made of two durable, lightweight fabrics: polyester and nylon.
The tethers connecting the parachute to the aeroshell were made of Kevlar, the same material used for bullet-proof vests.

The deployed parachute hurtled through the thickening atmosphere at very high speed, withstanding brutal forces. Atmospheric filling of the canopy continued until the full hemispheric shape was achieved. Twenty seconds after parachute deployment the entry vehicle jettisoned the bottom half of the aeroshell. Ten seconds later the lander, encased in uninflated airbags, unspooled a 60-foot-long bridle for six seconds and a lander radar system measured distance to the surface below. Eight seconds before touchdown gas generators inflated the lander's four airbags, each with six connected compartment (lobes).

Spirit's parachute being tested at the Jet Propulsion Laboratory (JPL) in Pasadena, California

Three seconds later, with the still-fast-moving lander some 30 to 50 feet above the surface, the bridle tether was automatically cut and the airbag-protected lander fell for a few seconds toward Mars. After bouncing several times, each time to a lower height, and rolling for more than two minutes, the lander came rest to a little more than half a mile from the first impact point. The gas bags deflated automatically, exposing the four-sided lander. In a complex sequential procedure the lander sides were unfolded, followed by displaying solar-array panels designed for generating electrical power. A time snag developed when one the airbags failed to fully deflate. For three days scientists on Earth brainstormed, contriving various schemes for clearing the rover's exit path from the lander so Spirit could start meandering and exploring the geologic composition of Mars. In the interim many startlingly clear photos were taken and beamed to Earth. Also, all Athena instrumentation was tested and found to be OK.

Finally engineers slowly rotated Spirit's unfolded and deployed wheels 115 degrees to align them with a different ramp. The plan was good and Spirit easily rolled down a 16 inch-high fabric ramp onto the planet's surface. Spirit could now set out on its assigned three-month exploration of the Red Planet. The Pasadena lab director excitedly announced to the world, "Mars is our sandbox, and we are ready to play."

The seemingly delicate, fragile parachute, ultimately disappearing to somewhere on the planet Mars after separation during the final stage of descent, did its job well, performing as had been planned for every part of its role. Its designers and builders smiled when they learned of Spirit's success, happy because of their remarkable accomplishment.

Jet Propulsion Laboratory personnel at every level of activity eagerly await the January 24 Mars arrival of Opportunity - Spirit's twin.

We are proud to featurearticles by the renowned para-historian Jim Bates. His articles featured in this magazine provide a historical perspective on the evolution of Aerial Delivery.

a load of rations for Marines at Korean Village. Even at 800 feet, the cargo landed 300 meters from its target, said Pack. In Afghanistan, where air delivery is used heavily to re-supply forces in remote locations, loads have landed more than a kilometer from troops on the ground, forcing them to hike and hunt for the goods.

Drop zones are sometimes marked with colored-smoke grenades or large canvas markers. That, followed by the low-flying planes, could give away the friendly unit's location, said Bush, who's served seven years of his career in air delivery and six in reconnaissance.

With the Sherpa, however, pilots don't even need to see the ground, and can make accurate drops day or night from as high as 25,000 feet and as far as nine miles from the drop zone, said Pack. In fact, numerous Sherpas could be dropped during one pass, saving time and fuel, and each could soar to a different unit at a different location stretched over several miles.

While seemingly a godsend to Marines in Iraq, the Sherpa's capabilities are limited. One Sherpa canopy can support no more than 1,200 pounds of cargo. The Marine riggers typical pack bundles weighing 2,200 pounds.

The U.S. military is currently developing the Joint Precision Air Drop System, a family of computer-guided cargo parachutes expected to one day support 21-ton loads. However, smaller versions of the system that can support between 2,200 and 10,000 pounds aren't due to be fielded for at least another four years, said Pack.

Tasked by commanders in Iraq to find an interim solution, the Army turned to Mist Mobility Integrated Systems Technology, Inc., a small civilian company based in Ottawa, Canada. More than three months ago, their Sherpa system was identified as an acceptable fix, said Army Reserve Capt. Barton T. Brundige, 41, a logistics operations officer with Multinational Corps - Iraq, who was in charge of fielding the system in Iraq.

"This is a 60-percent solution," said Pack. "It is a gap filler."

Dropped from a Marine Aerial Refueler Transport Squadron 352's KC-130 cargo plane, bundles of rations parachute to the desert floor outside Camp Korean Village, Iraq, during an aerial resupply mission on Aug. 9, 2004. Using standard military parachutes, cargo planes must fly at lower altitudes to ensure accurate drops, but are more susceptible to enemy fire. With the Sherpa, a commercially produced parachute system guided by the Global Positioning System that can steer itself from nearly five miles high to within 200 meters of a targeted drop point, military aircraft can drop supplies from safer altitudes. .
Photo by: Staff Sgt. Bill Lisbon

After talking with Bush, Brundige decided to outfit the platoon with the first Sherpas. Bush and three of his Marines, as well as four more air delivery Marines in California deploying to Iraq next month, then traveled to Yuma, Ariz., from July 6-17 to train to use the new gear. There they learned how to plan missions using the Sherpa's software, rig the system to a bundle of cargo and repair it if necessary.

After 10 drops using the Sherpa, Bush will provide the flight data to Brundige for further analysis. If everything checks out, 1st Air Delivery Platoon should receive 18 more Sherpas.

"It's like anything else. Until you actually give it to the guy on the ground and let them use it, you don't know everything. We don't anticipate the system being a failure," said Brundige, a Los Angeles native.

Each system, which includes a body, canopy, riggings, remote control, rechargeable batteries and software, costs $68,000, said Bush. A standard military cargo parachute runs approximately $11,000.

The Aug. 9 mission marked the fifth cargo drop by Marines in western Iraq this year. During Operation Iraqi Freedom last year, Marines only dropped supplies once. It was the first drop in combat since the Vietnam War, said Bush, a native of Kailua Kona, Hawaii.
Of the 5 million pounds of cargo moved by Combat Service Support Battalion 7 since March, approximately 100,000 pounds parachuted in, said Lt. Col. Adrian W. Burke, the battalion's commander and a 42-year-old native of Deer Park, Texas.

And Burke plans to continue to air deliver supplies, both via precision and standard chutes, as one of the several methods to keep Marines equipped.

Since it is a specialized method of distribution, though, Burke doesn't expect air delivery to replace vehicle convoys in Iraq. While dangerous, they are currently the most effective way to move supplies around the battlefield since vehicles and drivers are numerous and cargo weight is seldom a concern.

While air delivery has seen limited use by the Marines thus far in Iraq, its helps reduce the number of Marines and vehicles taking to the dangerous Iraqi highways, veins of insurgent activity but lifelines to sustain troops. Frankly for us, it's a combat zone," said Burke.

To reduce vehicle convoys to remote bases like Korean Village, Bush plans on equipping the second rotation of air delivery Marines with larger parachutes, albeit standard ones, and pallets capable of delivering much larger loads of rations and water. Sherpas will be incorporated into standard drops as well as used to resupply units operating remotely.

In addition, Brundige said the Army is attempting to modernize its supply distribution process throughout Iraq, and "aerial delivery is certainly a part of that."

"If we can use aerial delivery to keep soldiers and Marines off the roads, then that's a win-win for everybody," said Brundige.

Aerial Delivery Equipment Forecast

Hardware

NSN/NIIN	ITEM NAME	QUANTITY
4030010484047	GRAB HOOK ASSY	2200
1670000928661	SEPARATOR	167
4030010484047	GRAB HOOK ASSY	3800
4030010484046	GRAB HOOK ASSY	4700
5340003776642	SNAP HOOK	5100
1670015039819	CLAMP	1850
1670015039819	CLAMP	1050
1670004002771	CONNECTOR, PARACHUTE	100
7920015027539	BRUSH, WIRE BRISTLE	200
5325010871605	FASTENER, SNAPSLIDE	9000
1670013070534	SLIDE, TOGGLE LOCK	30
1670015041456	STIFFENER, MAIN, TOP	200
1670004345783	COUPLING ASSY	430
1670010272902	SLING, CARGO, AERIAL	1300
1670015041458	STIFFENER, RESERVE	200
1670015041456	STIFFENER MAIN	300
1670015041460	STIFFENER MAIN	300
1670015041461	STIFFENER, MAIN, BOTTOM	200
1670013425913	SKID BOARD	3000
1670008426109	PARACHUTE, CARGO	3095
1670015041459	SHACKLE	375
1670009980116	STRAP ASSY, PARA	250
1670011622370	RAIL TYPE V	207
1670013303742	LOOP, CLOSING RESER	3362
1670009980116	STRAP ASSEMBLY, PARA	500
1670013303282	RIPCORD,PARACHUTE	550
1670009370271	TIE DOWN, CARGO, AIRC	55001
1670013303282	RIP CORD, PARACHUTE	1500
1670000634500	RIP CORD, PARACHUTE	200
1670013336082	TIE DOWN, CARGO	700
1670011622382	ROLLER PAD	164
1670013041057	PANEL ASSEMBLY	500

Hardware

NSN/NIIN	ITEM NAME	QUANTITY
1670014689174	RIPCORD MODIFIED	4700
6150013904709	CABLE ASSEMBLY, POWE	2850
4020013383308	ROPE ASSEMBLY	30
1670012595932	PARACHUTE ASSEMBLY	407
1670011622367	RAIL TYPE V	56

Parachute

NSN/NIIN	ITEM NAME	QUANTITY
1670010272900	SLING, CARGO, AERIAL	1000
1670010272900	SLING, CARGO, AERIAL	2000
1670013347597	DEPLOYMENT BAG	600
1670010078563	RISER EXTENSION, PAR	6500
1670008726109	PARACHUTE, CARGO	2774
1670011832678	LEAF, EXTRACTION LIN	5500
4030006788560	SHACKLE	5500
1670003600475	RISER EXTENSION, PAR	215
1670011077651	LINE, MULTILOOP	630
1670012350923	DEPLOYMENT BAG PARA	295
1670014870777	PERSONE PARACHUTE MC1-1D	1469
1670001686065	HARNESS, PERSONNEL	336
5340000408219	STRAP, WEBBING	2000
1670010644452	LINE, MULITILOOP 60FT	1000
1670007084473	RISER EXTENSION, PAR	3000
1670000867780	PACK, PERSONNEL PARA	4974
1670010087755	SLING, CARGO, AERIAL	1300
1670014364798	PACK, PERSONNEL PARA	2474
1670012277992	HARNESS PARACHUTE	5381
1670010087755	SLING, CARGO, AERIAL	1300
1670014364798	PACK, PERSONNEL PARA	2474
1670012277992	HARNESS PARACHUTE	5381

Multimillon-Mile Bullseye

Humans have long been endowed with curiosity. Why this? Why that?

Such persistent curiosities, from earliest beginnings, have brought innumerable changes in every aspect of existence, continuing as part of the human psyche over eons of development.

In 2004 yet another result of long-standing human curiosity was realized when on January 4 a device created by scientists, termed a Mars Explorer Rover (MER) named "Spirit" successfully reached its planet Mars target close enough to be considered a "bullseye." It only missed its designated "X-marks-the spot" target center by fewer than six miles, landing in a ninety-five-mile wide "bowl" named Gusey Crater, about the size of Connecticut, a depression thought to have held a lake long ago. That's remarkable accuracy, considering many auto trips here on Earth end up more miles out of the way, even on a short travel distance.

Spirit was one of two rovers designed and built for the Mars Explorer Mission and was the first to arrive. A twin second rover — named "Opportunity" — was launched three weeks later, on July 7, and will land at another location on the far side of Mars.

Mars, about 4.6 billion years old (as are the sun and all planets in our solar system), is the fourth planet from the sun. Earth, as humorously known from a television situation comedy of the same name, is the "third rock from the sun," and Jupiter is the fifth planet. Other planets orbit the sun at greater distances. Mars is named for the ancient Roman god of war. The earlier Greek civilization also named its god of war Ares (pronounced AIReez). Both connected the planet with war because its reddish-orange color somewhat resembled the color of human blood. The planet coloration also resembles the color of rust, made of iron and oxygen.

Scientists of many centuries have concluded that because of evidence of channels (termed "canals" by some), and gullies, and valleys of varying depths it was possible they were shaped by flowing water over the course of eons. Others felt equally strongly that such evidence was wrongly interpreted. Other researchers thought that living things had dwelled on Mars because material found in meteorites landing on Earth, thought to have come from Mars, was similar to material on Earth. However, scientists generally remained unconvinced.

Travel time for the total mission equipment load — exceeding 18,000 pounds, including the 384-pound golf-cart-sized wheeled rover — was almost seven months from a June 10, 2003 launch from Cape Canaveral Air Force Station in Florida. (The MER Project is managed by the Jet Propulsion Laboratory (JPL) in Pasadena, California, for NASA's Office of Space Science in Washington D.C.)

At launch time, 64 million miles separated Earth and Mars. By the time Spirit arrived for a landing at the "Red Planet" — in its noncircular orbit — 105.7 million miles were between Earth and Mars. The approximate total distance traveled by Spirit was 303 million miles - and the target landing point was just about "on the button." The actual variation is still being calculated by mission control in Pasadena. As perspective on the travel distance, the Mars-to-Earth speed-of-light time for transmission of Spirit's signals was 9.46 minutes.

There were many critical items and sequential steps needing to be precisely controlled for the Spirit flight to be successful. One equipment item was the parachute to be used for the entry, descent, and landing (EDL) phase of the total mission. Relying on proven materials, but made larger for the far greater weights than on previous missions, the Spirit spacecraft used the same entry, descent, and landing plan as the 1997 MARS pathfinder mission. There is limited space for parachute stowage in flight and it was pressure-packed to reduce volume. Once reduced in its size, the assembly was heat-set for sterilization, then packed into a container mounted inside the "backshell" portion of the two-piece aeroshell.

After months and millions of miles of interplanetary travel the cruise stage of the Delta II launch rocket (ultimately to crash on Mars' surface) automatically separated from the spacecraft enclosing the lander container and the Spirit rover about 84 minutes before entering Mars' atmosphere, which is much thinner than Earth's. Spacecraft speed was some 12,000 miles per hour. Four minutes later, slowed by friction in the atmosphere, speed had reduced to about 960 miles per hour. At 5.3 miles above the surface, the "aeroshell" entry vehicle automatically deployed its parachute. As a drag device, the parachute steadily slowed the aeroshell/entry vehicle during entry into Mars' atmosphere and next throughout the descent and

Marines Stay In The Fight Using Aerial Delivery

FORWARD OPERATING BASE RIPLEY, Afghanistan (July 13, 2004) — Marines in combat still need supplies, so when a company from the 22nd Marine Expeditionary Unit (Special Operations Capable) needed it most, help came from a rare place ... 450 feet above their heads.

Marine KC-130Rs supporting the 22nd MEU (SOC) recently air-delivered food and water to Alpha Co. Battalion Landing Team 1st Bn., 6th Marines in the mountainous area of central Afghanistan.

Because the MEU's other aviation assets were needed elsewhere, the MEU decided to perform a rarely done operation to keep the company in the fight - a night containerized delivery.

Seen through a night vision device, parachutes holding supplies float to the ground after being dropped from a Marine KC-130R Hercules. The resupply drop was coordinated by the 22nd Marine Expeditionary Unit (Special Operations Capable), and delivered supplies to one of its rifle companies conducting combat operations in central Afghanistan.
Photo by: Lance Cpl. Charles G. Poag

Flying at night has become second nature to the KC-130R detachment. Nearly every night they make fuel and supply runs to Forward Operating Base Ripley, home of the 22nd MEU.

In the drops supporting Alpha Co., the KC-130R team dropped a total of sixteen containers, each weighing about 1500 lbs. over two missions. Aerial drops into combat zones have been around since Vietnam.

"It's something that's been in our tactical manual for quite a long time," said Capt. Peter Munson, of Cleveland, Ohio. Munson is the MEU Command Element's KC-130R liaison officer.

However, doing it in the dark is a new twist that has only recently been done in Iraq. This is the first time it's been done in Afghanistan.

"We just recently started working with night vision goggles in the fleet," said Munson. Munson stressed that they must be able to fly using night vision devices, as sometimes the mission dictates night flying.

Marine pilots actively train for such missions, qualifying semi-annually. During an actual drop, the KC-130R descends to approximately 450 feet above the ground. The rear ramp is lowered and the crew chief and his team in the cargo hold release the locks holding the cargo in the bay. The pilots then raise the nose of the aircraft and increase power as the aircraft tilts upwards. This allows gravity to take over, and the cargo rolls out of the bay and eventually to the ground. Parachutes quickly deploy from the cargo, slowing the package down just enough to prevent damage as it hits the ground below. Once all the containers have been dropped, usually in one run, the aircraft levels off and is on to its next mission.

The added challenge of doing it at night in mountainous terrain adds to the challenge.

"Your field of view is reduced when utilizing NVG's so your situational awareness is not as great as it normally would be during the day," said KC-130R pilot Capt. Josh Izenour, of Ashtabula, Ohio, who was in the cockpit during the mission. "Thus, you have to pay particularly close attention to terrain clearance and avoidance during low level flight. This is mitigated through extensive planning by the entire crew."

Keeping the Marine on the ground in the fight is what air support is about. For these air delivery missions, the success is defined by dropped gear that is on time and on target while maintaining cargo integrity. Izenour's crew accomplished all three; the cargo hit the drop zone a mere 50 feet from center, on time, and with no significant damage to the goods.

"It was extremely motivating for the entire detachment to be able to support the Marines in the field," said Izenour. "It was also very rewarding for the crew to be able to conduct a mission we train for, but rarely have the opportunity to execute."

In addition to its Command Element and BLT 1/6, the MEU consists of Marine Medium Helicopter Squadron 266 (Reinforced) And MEU Service Support Group 22.

For more information on the 22nd MEU (SOC)'s role in Operation ENDURING FREEDOM, visit the unit's web site at http://www.22meu.usmc.mil.

Delivery Schedule

NSN	NOUMENCLATURE	QTY	SCHEDULE
1670 000867780	PACK,PERSONNEL PARA	4974	Jan-Sep 05
1670 007334883	DEPLOYMENT BAG,PARA	4973	Oct-04 Feb-06
1670 007533928	PAD,ENERGY DISSIPAT	18915	Oct-04 Oct-05
1670 007835988	LINK ASSEMBLY,SINGL	1495	Oct-04
1670 008726109	PARACHUTE,CARGO	1244	Oct-Dec 04
1670 008924218	PARACHUTE,RESERVE,P	702	Oct-04 Feb-05
1670 010087755	SLING,CARGO,AERIAL	977	Feb-Oct 05
1670 010167841	PARACHUTE,CARGO	1702	Oct-04 Aug-06
1670 010272900	SLING,CARGO,AERIAL	1925	Dec-04 Jun-06
1670 010583810	NET,CARGO,AERIAL DE	161	Feb-05
1670 010653755	PARACHUTE,CARGO	850	Oct-04 Feb-05
1670 010978817	RELEASE,CARGO PARAC	99	Feb-Mar 05
1670 010992380	TIMER DELAY ASSEMBL	599	Oct-04 Feb-05
1670 011622370	RAIL TYPE V	263	Jan-May 05
1670 011832678	LEAF,EXTRACTION LIN	2500	Jan-Sep 05
1670 012477151	CANOPY,PERSONNEL PA	3650	Oct-04 Sep-05
1670 012622360	CANOPY,PERSONNEL PA	400	Oct-Nov 04
1670 012721901	HARNESS,PERSONNEL P	4790	Oct-04 Apr-05
1670 013043006	PANEL ASSEMBLY,MAIN	900	Oct-04 Feb-05
1670 013062100	PARACHUTE,PERSONNEL	2320	Oct-04 Dec-06
1670 013070534	SLIDE,TOGGLE LOCK	35	Oct-04
1670 013303279	CANOPY,PERSONNEL PA	760	Oct-04 Jan-07
1670 013303284	RISER EXTENSION,PAR	25	Oct-04
1670 013303741	LOOP,CLOSING,MAIN	8800	Oct-04 Mar-06
1670 013303742	LOOP,CLOSING,RESERV	14100	Oct-04 Dec-06
1670 013303743	RIPCORD,MAIN RELEAS	790	Oct-04 Apr-07
1670 013303744	SLIDER,DOME-LIPPED	580	Oct-04 May-07
1670 013303745	LINES,CONTROL	980	Oct-04 Mar-08
1670 013303747	PILOT CHUTE,MAIN	2500	Oct-04 Jul-05
1670 013323916	CANOPY,PERSONNEL PA	1510	Oct-04 Oct-09
1670 013347597	DEPLOYMENT BAG,PARA	600	Oct-04 Mar-06
1670 013427686	DEPLOYMENT SYSTEM,R	360	Jan-05 Jul-06
1670 013538424	BRACKET ASSEMBLY,EX	200	Oct-04
1670 014751207	PADDED POCKET ASSEM	100	Oct-Nov 04
1670 014842234	PARACHUTE,PERSONNEL	7299	Oct-04 Jun-05
1670 014851654	RAIL DRAS	60	Oct-Dec 04
1670 014861342	ROLLER PAD,DRAS	25	Oct-04
1670 014876077	WEBBING,TEXTILE,INT	1000	Nov-04
1670 015039820	CONTROL LINE ASSEMB	50	Jan-05
1670 015041456	STIFFENER,MAIN,TOP	500	Nov-Dec 04
1670 015041458	STIFFENER,RESERVE,C	200	Nov-04
1670 015041459	STIFFENER,MAIN,RIGH	375	Nov-04
1670 015041460	STIFFENER,MAIN,LEFT	300	Nov-04
1670 015041461	STIFFENER,MAIN,BOTT	200	Nov-04
4020 010476814	FIBER ROPE ASSEMBLY	1004	Oct-04 May-05
4020 010476815	FIBER ROPE ASSEMBLY	2054	Oct-04 Aug-05
4030 006788560	SHACKLE	4500	Mar-05
4030 010484045	SHACKLE ASSY	1500	Jun-Nov 05
4030 010484046	GRAB HOOK ASSY	4700	Mar-05 Aug-06
4030 010484047	GRAB HOOK ASSY	3203	Jan-Dec 05
5340 009370273	STRAP,WEBBING	13693	Nov-04 Oct-05
6645 011083457	TIMING MOVEMENT,MEC	1500	Jan-May 05

Aerial Delivery Manufacturers “Qualify” for Quality

For Aerial Delivery Manufacturers, competing for government contract awards just got a lot easier. In an effort spear-headed by the Aerial Delivery Equipment Group, the processing time for manufacturers to meet government requirements for the production of personnel parachutes will be drastically reduced from 7.5 months to 30 days.

In order for a manufacturer to bid on a contract for personnel parachutes, they must first be certified and placed on the Qualified Product List (QPL). In order to make the list, manufacturers must undergo a rigorous inspection process to determine whether they are capable of producing a product that will protect the safety of our soldiers. Currently, the process can take any up to 7.5 months before a manufacturer is placed on the list of approved personnel parachute manufacturers. In one instance, it took as long as two years!

By streamlining the QPL process manufactures will qualify faster to bid on government personnel parachute contracts

In the past, this three step process for making the list was long and arduous. The first step in the process involvesthe Manufacturer (or QPL candidate) requesting a Technical Data Package (TDP) from the Aerial Delivery Equipment Group. The TDP provides technical drawings, specifications and requirements for making parachutes. In the second step, the QPL candidate uses the TDP to make a sample of the parachute. This sample is evaluated by the Aerial Delivery Engineer Support Team (ADEST). The evaluation inspection is meticulous and detailed and can take several days to complete. Marking ink, hardware, construction, basting, assembly requirements and stitch patterns, are just a few of the plethora of items that are checked during the painstaking inspection process. The inspection also includes a site visit to the manufacturing facility. This site survey allows the inspector to view the plant's equipment and assess the production practices and capabilities of the perspective manufacturer. Once the inspection is completed, the third and final step includes, the support team notifing the QPL candidate of the results. All deficiencies must be corrected before the candidate is eligible and placed on the Qualified Product List.

Once the manufacturer is placed on the QPL, they are eligible to compete for a government personel parachute contract award. Being placed on the QPL does not guarantee award, it merely qualifies the manufacturer to place a bid on a government solicitation.

Because of the stringent requirements of the QPL, several potential contractors shy away from bidding on parachute contracts and for good reason. The time, effort and expense invested in meeting the requirements rest solely on the manufacturer, with no guarantees on winning the contract. For some manufacturers, it is a risk they would rather avoid.

In response to these concerns, the Aerial Delivery Equipment Group, in cooperation with the Aerial Delivery Engineer Support Team has streamlined the QPL process. This streamlining effort not only reduces the processing time, but greatly increases the success rate for making the QPL list quickly. Here is a summary of the following changes:

-Until recently, one individual was delegated to conduct QPL inspections. In an effort to increase the response time and availability of the inspector, ADEST added two additional inspectors to the inspection team.

-ADEST inspectors will conduct a Pre-Production Review to ensure that both government and manufacturer have a shared understanding of the requirements for the manufacture of personnel parachutes. The elements of the technical data package will be discussed and clarification or reinforcement of key requirements will be reviewed.

-ADEST is developing a lessons learned/evaluation checklist in order to help QPL candidates eliminate/reduce deficiencies and quickly obtain list approval.

One Very Smart Logging Device

STARA Technologies' miniaturized guided parafoil sensor delivery systems are transforming the parafoil industry

STARA Technologies has designed and developed the world's smallest guided sensor delivery system. Its miniature precision emplacement systems integrate the use of Guided Parafoil Sensors (GPS) with Inertial Navigation Systems (INS), resulting in one very smart logging device. The payloads include--but are not limited to--sensors that have the capability and intelligence to detect the whereabouts of weapons of mass destruction (WMD) and to locate munitions in order to neutralize enemy military hardware. The cutting-edge technology also contributes to the survival of persons in remote areas, as in transporting and supplying blood to troops in remote and inaccessible locations.

GNAT 50 delivering a simulated 20 pound anti-tank

STARA is the leading developer of miniaturized GPS delivery systems for lightweight payloads. Their most popular system is designed to handle payloads weighing between 5 and 100 pounds, which can be executed by patented guidance units small enough to deliver from both manned and unmanned aerial vehicles (UAV). An un-piloted drone aircraft assists the unmanned deliveries.

STARA Technologies works continuously to improve parafoil technologies. Company President Colin MacCavitt says the company is now working closely with Pioneer Aerospace to produce high-performance parafoils. The company is also working with the Cuben Fibre company to introduce extremely lightweight, durable parafoil materials that will lead to smaller packing densities. If all goes as planned, STARA could potentially change the parafoil industry with advance-thinking capabilities. MacCavitt is very proud of the company's advanced technologies and their impact on various industries and the military. The company was founded in November 2000 in Mesa, Arizona, and employs 10 workers and 5 full-time consultants. The employees are experts in the fields of mechanical design, solid object modeling, electronic circuit design, embedded software development, graphical user interface software development, database design, and information technology management.

Angela Hunter is an Equipment Specialist for the Aerial Delivery Equipment Group

Aerial Delivery Manufacturers “Qualify” for Quality

--Target goal is 30 days for processing QPL requests.

--After completing the QPL process, candidates will be asked to complete a feedback questionnaire. This feedback form will provide insight for process improvements from a manufacturer's perspective.

Improving the QPL process is a win-win situation for both government and industry partners. As always, the most compelling reason to improve the process is to provide the best equipment and the best support to our nation's War fighters. However, expanding the industrial base, increasing competition and reducing costs also "qualify" the need for quality improvements.

Daniel Galarza is a Logistics Management Specialist for the Aerial Delivery Equipment Group and an Editor-in-Chief of Aerial Delivery Magazine